PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PWO-P001-037	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/IB2004/001244	International filing date *(day/month/year)* 23.04.2004	Priority date *(day/month/year)* 25.04.2003
International Patent Classification (IPC) or national classification and IPC A61B17/88		
Applicant PRECIMED S.A. et al.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
   a. ☒ *sent to the applicant and to the International Bureau)* a total of 3 sheets, as follows:
      ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
      ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

☒	Box No. I	Basis of the opinion
☐	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
24.11.2004	29.06.2005
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Held, G Telephone No. +49 89 2399-2248

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/IB2004/001244

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

   ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
   - ☐ international search (under Rules 12.3 and 23.1(b))
   - ☐ publication of the international application (under Rule 12.4)
   - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages	
1-5	as originally filed
Claims, Numbers	
1-14	filed with the demand
Drawings, Sheets	
1/7-7/7	as originally filed

   ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

* *If item 4 applies, some or all of these sheets may be marked "superseded."*

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-14
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-14
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-14
	No:	Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item V
Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following document:
D1: US-A-6 299 616

The document D1 is regarded as being the closest prior art to the subject-matter of independent claim 1 and shows (the references in parentheses applying to this document): A surgical ratchet having a handle (52), a driver received within the handle in a rotatable relationship with respect thereto, a ratcheting mechanism interposed between the handle and driver (implicit).
The subject-matter of claim 1 differs from the device disclosed in D1 in that a locking mechanism releasably holds the handle to the ratchet mechanism and wherein displacing of the locking mechanism to an unlock position moves a locking obstruction out of an obstructing position.

The problem to be solved is a surgical ratchet that is easy to disassemble for cleaning so as to better ensure sterilization.
A detachable ratchet mechanism is not known from prior art documents. Therefore, the solution proposed in claim 1 is considered as being novel and involving an inventive step. Thus, claim 1 fulfills the requirements of Article 33(2) and (3) PCT.

Claims 11 and 14 which are defined as independent claims also define the essential features of claim 1 and therefore are considered as being allowable.

Claims 2-10 and 12-13 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

AMENDED CLAIMS

[received by the International Bureau on 04 October 2004 (04.10.2004); original claims 1-14 replaced by amended claims 1-14 (3 pages)]

1 A surgical ratchet (10) having a handle (10), a driver (14) received within the handle in a rotatable relationship with respect thereto, a ratcheting mechanism (16) interposed between the handle and driver, and a locking mechanism (20) releasably holding the handle to the ratchet mechanism, wherein displacing of the locking mechanism to an unlock position moves a locking obstruction (32) out of an obstructing position thereby permitting easy release of the ratchet mechanism from the handle and ready disassembly of the ratchet mechanism from the handle.

2 The ratchet (10) of claim 1, wherein the locking mechanism (20) comprises a ring (24) rotatable on the handle (12), the ring having a surface selectively biasing a ball (32) into or out of a recess (34) to engage or disengage the ratchet mechanism (16) to lock or unlock the assembly.

3 The ratchet (10) of claim 1, wherein the locking mechanism (20) comprises a surface against which a user may apply pressure to effectuate a change in interactivity of components in order to engage or disengage the ratchet mechanism (16) to lock or unlock the assembly.

4 The ratchet (10) of claim 1, wherein a selector (50) enables a user to activate, disactivate, or lock the ratcheting mechanism (16).

5 The ratchet (10) of claim 1, wherein the locking mechanism (20) is comprised of a selector (50) having a position in which at least one pawl (44, 46) is in an engaged position, wherein, when the selector is in the engaged position, the at least one pawl locks the ratchet mechanism against free movement in a selected direction.

6 The ratchet (10) of claim 1, wherein the locking mechanism (16) is comprised of a selector (50) having

a position in which at least one pawl (44, 46) is in a released position, wherein, when the selector is in the released position, the at least one pawl disengages the ratchet mechanism, thus permitting free motion in either direction.

7 The ratchet (10) of claim 1, wherein a portion of the driver (14) protrudes from an end (36) of the handle (12), thereby presenting an impaction surface enabling the ratchet to be used as an impactor.

8 The ratchet (10) of claim 1, wherein the ratcheting mechanism (16) comprises

(a) a housing (22) in which left and right hand pawls (44, 46) are pivotably connected and selectively pivotably engageable by a cam selection device (50) for selection of a ratcheting direction; and

(b) a toothed hub (52) connected, at least indirectly, to the handle.

9 The ratchet (10) of claim 8, wherein the cam selection device (50) comprises a cam having a cam surface (53) against which an end (66, 67) of the at least one pawl (44, 46) rides and wherein relative movement of the cam surface to the end of the at least one pawl causes the pawl to pivot in a prescribed manner.

10 The ratchet (10) of claim 8, wherein an end (66, 67) of the at least one pawl (44, 46) engaging the toothed hub (52) is formed so as to permit relative rotation with respect to the hub in one rotational direction, and to block rotation in the opposite rotational direction.

11 A surgical ratchet (10) having a handle (12), a driver (14) received within the handle in a rotatable relationship with respect thereto, a ratcheting mechanism (16) interposed between the handle and driver, and a locking mechanism (20) releasably holding the handle to the ratchet mechanism,

wherein the locking mechanism (20) comprises a ring (24) rotatable on the handle, the ring having a surface (53) which selectively biases a ball (32) into or out of a recess (34) to engage or disengage the ratchet mechanism (16) to lock or unlock the assembly, whereby displacing of the locking mechanism (20) into an unlock position moves a locking obstruction (32) out of an obstructing position thereby permitting easy release of the ratchet mechanism from the handle and ready disassembly of the ratchet mechanism from the handle,

wherein the ratcheting mechanism (16) comprises

(a) a housing (22) in which left and right hand pawls (44, 46) are pivotably connected and selectively pivotably engageable by a cam selection device (50) for selection of a ratcheting direction, the cam selection device comprising a cam having a cam surface against which an end of the at least one pawl rides and wherein relative movement of the cam surface to the end of the at least one pawl causes the pawl to pivot in a prescribed manner;

(b) a toothed hub (52) connected, at least indirectly, to the handle, and

(c) a selector (50) which has a position in which at least one pawl (44, 46) is in an engaged position, wherein, when the selector is in the engaged position, the at least one pawl locks the ratchet mechanism against free movement in a selected direction, thus enabling a user to activate, disactivate, or lock the ratcheting mechanism.

12 The ratchet (10) of any of the foregoing claims, wherein the handle (12) is a T-bar (138).

13 The ratchet (10) of any one of claims 1-11, wherein the handle (12) includes an interface (140) for receiving a T-bar attachment (138).

14 A tool kit (150) for surgical use, the tool kit including at least the following components:

(a) a surgical ratchet (10) having a handle (12), a driver (14) received within the handle in a rotatable relationship with respect thereto, a ratcheting mechanism (16) interposed between the handle and driver, and a locking mechanism (20) releasably holding the handle to the ratchet mechanism, wherein displacing of the locking mechanism to an unlock position moves a locking obstruction (32) out of an obstructing position, thereby permitting easy release of the ratchet mechanism from the handle and ready disassembly of the ratchet mechanism from the handle;

(b) at least one tool selected from a group of tools consisting of drills (134), taps (136), guide pins (130), screwdrivers (132), reamer drivers, and wire introducers; and

(c) a case (160) for receiving the ratchet and the at least one tool.